

Amendments to the Drawings:

The attached sheet of drawings includes changes to Figure 1. This sheet, which includes Figures 1 and 2, replaces the original sheet including Figures 1 and 2. In Figure 1, descriptive labels have been provided for the boxes, in compliance with the Examiner's comments.

Attachment: 1 replacement sheet

REMARKS

I. Introduction

Claims 1 and 3-14 are now pending in the present application after cancellation of claim 2 without prejudice. Claims 1, 3, 6, 8-10, 12 and 14 have been amended without prejudice. In view of the following remarks, it is respectfully submitted that all of the presently pending claims are in allowable condition.

Applicants note with appreciation the acknowledgment of the claim for foreign priority and the acknowledgment that all certified copies of the priority documents have been received.

II. Objections to Drawings and Claims

The Examiner objected to Figure 1 as needing to show more specific details of the invention. In response, Applicants submit a replacement drawing sheet containing amended Figure 1. The replacement drawing sheet includes descriptive labels for the boxes in Figure 1. These descriptive labels are fully supported by the specification, e.g., page 2, line 31 through page 4, line 15. Withdrawal of the objection to the drawings is respectfully requested.

The Examiner also objected to claims 3, 10 and 12 as not defining variable U ; claim 8 as not defining $U(\tau)$; and claim 14 as not defining $L(t)$ or $a[U(\tau)]$. Claims 4, 5 and 11 were objected to as being dependent upon an objected claim. In response, claims 3, 10 and 12 have been amended to define variable U . Amended claims 3 and 10 recite, in relevant part, " $a_i(U)$ being weight functions, where variable weighting factor a_i is a function of measured battery voltage U ." Amended claim 12 recites, in relevant part, " U being measured battery voltage." Claim 8 has been amended to define $U(\tau)$. Amended claim 8 recites, in relevant part, " a is a function of $U(\tau)$, a measured battery voltage value". Claim 14 has been amended to define $L(t)$ and $a[U(\tau)]$. Amended claim 14 recites, in relevant part, " $L(t)$ being a voltage integral and $a[U(\tau)]$ being the weighting factor." In accordance with these amendments, U , $U(\tau)$, $L(t)$ and $a[U(\tau)]$ have been properly defined in the claims as requested. Withdrawal of the objections to the claims is respectfully requested.

III. Rejection of Claims 1-5 and 9-11 under 35 U.S.C. § 102(b)

Claims 1-5 and 9-11 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 6,359,419 (“Verbrugge”). Applicants note that claim 2 has been canceled, and independent claims 1 and 9 have been amended, without prejudice, to more clearly point out the claimed invention. Applicants further note that amended claims 1 and 9 and all of their dependent claims are not anticipated by Verbrugge for the following reasons.

As amended, claims 1 and 9 both recite, in relevant part, that “*the weighting factor is a function of the measured battery voltage.*” As shown in Figure 2 and in Applicants' specification at page 5, lines 18-19, the weighting factor is a function of the measured battery voltage. Accordingly, the charge state of the vehicle battery is determined from an integration operation with the variable weighting factor being a function of the measured battery voltage.

In contrast to the invention recited in claims 1 and 9, the method for determining the charge state of a battery described in Verbrugge does not require the measurement of battery voltage. Instead, Verbrugge's method is based on *measured battery current*. The Office Action's assertion that a voltage sensor must be provided (although it is not explicitly mentioned in Verbrugge) is untenable. Column 3, lines 33-35 of Verbrugge discloses that an energy manager indicates current, voltage and charge state. It is not, however, mentioned that the voltage is measured. It is clear from the description of the analyzing method for determining the charge state of a battery (column 5, lines 34-54), that the voltage is **calculated** from the quiescent voltage, the voltage drop IR , and an integral. This would be unnecessary if a voltage measurement was implemented. Because the measurement of the battery current is absolutely required as taught in Verbrugge, one of the key benefits of the present invention—that no complex calculation of the battery voltage based on current is required—cannot be obtained by the cited Verbrugge reference.

Thus, in contrast to Verbrugge's use of measured battery current to determine a charge state of a battery, amended claims 1 and 9 of the present invention require that the charge state of the battery be determined from the measured battery voltage and an integration operation with a variable weighting factor that is a function of the measured battery voltage. Accordingly, amended claims 1 and 9, as well as their dependent claims 3-5 and 10-11, are not anticipated by Verbrugge.

For at least the foregoing reasons, Applicants respectfully submit that amended independent claims 1 and 9, as well as their dependent claims 3-5 and 10-11, are patentable over Verbrugge, and withdrawal of the anticipation rejection is respectfully requested.

IV. Allowable Subject Matter

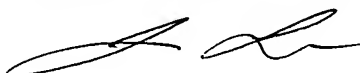
The Examiner indicated that claims 6-8 and 12-14 would be allowable if rewritten to overcome the claim objections set forth in the Office Action and to include all of the limitations of the base claim and any intervening claims. In response, Applicants have amended the claims to overcome the claim objections. Additionally, as set forth above, independent claims 1 and 9, from which claims 6-8 and 12-14 depend, have been amended to overcome the anticipation rejection and are thus in condition for allowance. Accordingly, dependent claims 6-8 and 12-14 are in condition for immediate allowance in their present dependent form.

V. Conclusion

In view of the above remarks, it is respectfully submitted that all of the presently pending claims are in allowable condition. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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 (R. No. 36,197)

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